UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/964,690	09/28/2001	Li-Lien Lee	146712002600	2930

25227 7590 08/24/2004

MORRISON & FOERSTER LLP
1650 TYSONS BOULEVARD
SUITE 300
MCLEAN, VA 22102

EXAMINER	
RICKMAN, HOLLY C	

ART UNIT	PAPER NUMBER
1773	

DATE MAILED: 08/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/964,690	LEE ET AL.
	Examiner	Art Unit
	Holly Rickman	1773

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 October 2003*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5,7-16 and 18-20* is/are rejected.

7)☒ Claim(s) *6,17* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. Claims 1-5, 7-9, 11-16, and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bian et al. (US 6174582).

Bian et al. disclose a magnetic recording medium having a seedlayer formed from Nb and containing nitrogen. The reference teaches that the seedlayer is sputtered in an atmosphere containing N and may have a N concentration of 10-50 at % (col. 4, lines 57-60; col. 5, lines 22-49). Bian et al. teach that the thickness of the seedlayer is not believed to be critical and a range of 5-30 nm is given as guidance. Thus, the reference fails to disclose an embodiment of the invention having a seedlayer 1-40 Å in thickness. However, it is noted that the reference does state that the "thicknesses of the layers are not believed to be critical for practicing the invention, but the following ranges are given as guidance. The seed layer is preferably from about 5 to 30 nm thick." See column 4, lines 57-60. Thus, values of ***"about" 5 nm or 50 Å*** are within the scope of the invention. It is the Examiner's contention that the claimed range of about 1 to ***about 40 Å*** overlaps the claimed end point of "about 5 nm."

In any case, it would have been obvious to one of ordinary skill in the art at the time of invention to use the thinnest seedlayer possible in order to reduce costs associated with producing the recording medium. Since the reference clearly states that the thickness of the seedlayer is not critical, it would have been well within the purview of one of ordinary skill in the art at the time of invention to determine what this thickness would be. Furthermore, there does not appear to be any distinction in the properties of

the article the numbers are so close, they appear to overlap. In any event these values would be minor obvious variations and expected to have the same properties. *See Titanium Metals Corporation vs Banner,* 778 F. d. 775, 227 USPQ 773 (Fed. Cir. 1985).

2. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bian et al. (US 6174582) in view of Futamoto et al. (US 6607849).

Bian et al. disclose all of the limitations of the claims except for the claimed coercivity values. The reference does teach that the coercivity is greater than 2000 Oe (see col. 7, claim 9).

Futamoto et al. teach that it is known in the art to increase coercivity by decreasing the product of Br and thickness of the magnetic film in order to "reduce the effect of the demagnetizing field at the magnetic recording process." See column 1, lines 29-33.

It would have been obvious to one of ordinary skill in the art at the time of invention to increase the coercivity of the medium taught by Bian et al. in order to achieve the associated benefit taught by Futamoto et al.

Allowable Subject Matter

3. Claims 6 and 17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Bian et al. fail to teach or suggest a magnetic recording medium having a coercivity within the ranges set forth in claim 10. Furthermore, the reference fails to teach or suggest a motivation to optimize the niobium:metal ratio in the seedlayer.

Response to Arguments

4. Applicant's arguments filed 10/23/03 have been fully considered but they are not persuasive with respect to the rejection of the claims in view of Bian et al.

Applicant argues that the plain meaning of "about" has been addressed in *BJ Services Company V. Halliburton Energy Services, Inc.*, Case No. 02-1496 (Federal circuit decision August 6, 2003). The Federal Circuit agreed that "the term 'about' is intended to encompass the range of experimental error that occurs in any measurement and that one of skill in the art would readily understand the range."

However, Applicant appears to be defining "about" as a very narrow range of experimental error measured using a single piece of equipment. One of ordinary skill in the art would reasonably expect different values for the range of experimental error depending on the specific materials used and the specific deposition equipment and techniques used. Thus, it is the Examiner's contention that the "plain meaning" of "about" allows for more latitude than the narrow ranges of experimental error set forth in the declarations filed under 35 CFR 1.132 would suggest.

Furthermore, it is noted that Bian et al. disclose a seed layer thickness of "about 5nm" which is different from a disclosure of about 50 Å. One of ordinary skill in the art would not derive a lower endpoint of range of error of 47 Å (two significant digits) for a

value of 5 nm (one significant digit). It is the Examiner's contention that one of ordinary skill in the art would expect "about 5 nm" to encompass at least 4 nm (i.e. 40 Å). Furthermore, there does not appear to be any distinction in the properties of the claimed invention and the article taught by Bian et al. The numbers are so close, they appear to overlap. It has been held that a prima facie case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties. These values would be minor obvious variations and expected to have the same properties. *See Titanium Metals Corporation vs Banner,* 778 F. d. 775, 227 USPQ 773 (Fed. Cir. 1985).

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Holly Rickman whose telephone number is (571) 272-1514. The examiner can normally be reached on Monday-Friday 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul J. Thibodeau can be reached on (571) 272-1516. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Holly Rickman
Primary Examiner
Art Unit 1773

hcr
August 20, 2004